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Claim 3144. (Previously Presented) A non-porous solid support comprising one or more amine(s), hydroxyl(s) or epoxide(s) thereon, wherein at least one single-stranded nucleic acid is fixed or immobilized in hybridizable form to said non-porous solid support via said one or more amine(s), hydroxyl(s) or epoxide(s).

Claim 3145. (Previously Presented) A non-porous solid support comprising one or more amine(s), hydroxyl(s) or epoxide(s) thereon, wherein at least one double-stranded nucleic acid is fixed or immobilized to said non-porous solid support via said one or more amine(s), hydroxyl(s) or epoxide(s), and wherein one nucleic acid strand of said at least one double-stranded nucleic acid has covalently attached thereto either:

- (i) a non-radioactive signaling moiety, or
- (ii) a non-radioactive bridging moiety covalently or non-covalently attached to a non-radioactive signaling moiety.

Claim 3146. (Previously Presented) The non-porous solid support of claims 3144, 3145, 3287, 3324 or 3325, wherein said non-porous solid support comprises glass or plastic.

Claim 3147. (Previously Presented) The non-porous solid support of claims 3144, 3145, 3287, 3324 or 3325, wherein said non-porous solid support comprises a plate or plates, a well or wells, a microtiter well or microtiter wells, a depression or depressions, a tube or tubes, or a cuvette or cuvettes.

Claims 3148-3149. (Canceled).

Claim 3150. (Previously Presented) The non-porous solid support of claim 3287 or 3325, comprising one or more amines.

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**Claim 3151. (Previously Presented)** The non-porous solid support of claims 3144, 3145, 3287, 3324 or 3325, wherein said non-porous solid support has been treated with a surface treatment agent, a blocking agent, or both.

**Claim 3152. (Previously Presented)** The non-porous solid support of claim 3151, wherein said surface treatment agent comprises an amine providing compound, an epoxy glue or solution, an acid solution, or ammonium acetate.

**Claim 3153. (Previously Presented)** The non-porous solid support of claim 3151, wherein said blocking agent comprises Denhardt's solution.

**Claim 3154. (Previously Presented)** The non-porous solid support of claims 3144, 3145, 3287, 3324 or 3325, wherein said fixation or immobilization to said non-porous solid support is covalent.

**Claim 3155. (Previously Presented)** The non-porous solid support of claims 3144, 3145, 3287, 3324 or 3325, wherein said fixation or immobilization to said non-porous solid support is non-covalent.

**Claim 3156. (Canceled).**

**Claim 3157. (Previously Presented)** The non-porous solid support of claims 3145, 3287 or 3325, wherein one strand of said at least one double-stranded nucleic acid is fixed or immobilized to said non-porous solid support and the other strand of said at least one double-stranded nucleic acid is hybridized to said one strand.

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Claim 3158. (Previously Presented) The non-porous solid support of claims 3144 or 3324, wherein said nucleic acid is DNA.

Claim 3159. (Previously Presented) The non-porous solid support of claims 3145, 3287 or 3325, wherein said nucleic acid is DNA.

Claim 3160. (Previously Presented) The non-porous solid support of claim 3144, wherein said nucleic acid comprises a nucleic acid sequence complementary to a nucleic acid sequence of interest sought to be identified, quantified or sequenced.

Claim 3161. (Previously Presented) The non-porous solid support of claims 3145 or 3287, wherein one strand of said at least one double-stranded nucleic acid comprises a nucleic acid sequence of interest sought to be identified, quantified or sequenced.

Claim 3162. (Previously Presented) The non-porous solid support of claims 3144 or 3324, wherein said single-stranded nucleic acid is unlabeled.

Claim 3163. (Previously Presented) The non-porous solid support of claims 3144, 3145, 3287, 3324 or 3325, wherein said non-porous solid support is transparent or translucent.

Claim 3164. (Previously Presented) The non-porous solid support of claims 3145 or 3287, wherein said non-radioactive signaling moiety is quantifiable in or from a fluid or solution, said quantity being proportional to the amount or quantity of said non-radioactive signaling moiety.

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Claim 3165. (Previously Presented) The non-porous solid support of claims 3145 or 3287, wherein said non-porous solid support is transparent or translucent, and said non-radioactive signaling moiety is quantifiable in or from a fluid or solution or from said non-porous solid support, said quantity being proportional to the amount or quantity of said non-radioactive signaling moiety.

Claim 3166. (Previously Presented) The non-porous solid support of claims 3145, 3287 or 3325, wherein said non-radioactive signaling moiety comprises a chromagen or a chromagenic compound.

Claim 3167. (Previously Presented) The non-porous solid support of claims 3145, 3287 or 3325, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by photometric techniques.

Claim 3168. (Previously Presented) The non-porous solid support of claims 3144 or 3324, comprising more than one single-stranded nucleic acid.

Claim 3169. (Previously Presented) The non-porous solid support of claims 3145, 3287 or 3325, comprising more than one double-stranded nucleic acid.

Claims 3170-3171 (Canceled).

Claim 3172. (Previously Presented) A system comprising a non-porous solid support which comprises one or more amine(s), hydroxyl(s) or epoxide(s) thereon, wherein at least one single-stranded nucleic acid is fixed or immobilized thereto in hybridizable form to said non-porous solid support via said one or more amine(s), hydroxyl(s) or epoxide(s).

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**Claim 3173. (Previously Presented)** A system comprising a non-porous solid support which comprises one or more amine(s), hydroxyl(s) or epoxide(s) thereon, wherein at least one double-stranded nucleic acid is fixed or immobilized to said non-porous solid support via said one or more amine(s), hydroxyl(s) or epoxide(s), and wherein one nucleic acid strand of said double-stranded nucleic acid has covalently attached thereto either:

- (i) a non-radioactive signaling moiety, or
- (ii) a non-radioactive bridging moiety covalently or non-covalently attached to a non-radioactive signaling moiety.

**Claim 3174. (Previously Presented)** The system of claims 3172, 3173, 3279, 3280, 3281 or 3282, wherein said non-porous solid support comprises glass or plastic.

**Claim 3175. (Previously Presented)** The system of claims 3172, 3173, 3279, 3280, 3281 or 3282, wherein said non-porous solid support comprises a plate or plates, a well or wells, a microtiter well or microtiter wells, a depression or depressions, a tube or tubes, or a cuvette or cuvettes.

**Claims 3176-3178. (Canceled).**

**Claim 3179. (Previously Presented)** The system of claims 3172, 3173, 3279, 3280, 3281 or 3282, wherein said non-porous solid support has been treated with a surface treatment agent, a blocking agent, or both.

**Claim 3180. (Previously Presented)** The system of claim 3179, wherein said surface treatment agent comprises an amine providing compound, an epoxy glue or solution, an acid solution or ammonium acetate.

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Claim 3181. (Previously Presented) The system of claim 3179, wherein said blocking agent comprises Denhardt's solution.

Claim 3182. (Previously Presented) The system of claims 3172, 3173, 3279, 3280, 3281 or 3282, wherein said fixation or immobilization to said non-porous solid support is covalent.

Claim 3183. (Previously Presented) The system of claims 3172, 3173, 3279, 3280, 3281 or 3282, wherein said fixation or immobilization to said non-porous solid support is non-covalent.

Claim 3184. (Canceled).

Claim 3185. (Previously Presented) The system of claims 3173, 3281 or 3282, wherein one strand of said double-stranded nucleic acid is fixed or immobilized to said non-porous solid support and the other nucleic acid strand of said double-stranded nucleic acid is hybridized to said one strand.

Claim 3186. (Previously Presented) The system of claims 3172 or 3280, wherein said nucleic acid is DNA.

Claim 3187. (Previously Presented) The system of claims 3173, 3281 or 3282, wherein said nucleic acid is DNA.

Claim 3188. (Previously Presented) The system of claim 3172, wherein said nucleic acid comprises a nucleic acid sequence complementary to a nucleic acid sequence of interest sought to be identified, quantified or sequenced.

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Claim 3189. (Previously Presented) The system of claims 3173 or 3288, wherein one strand of said at least one double-stranded nucleic acid comprises a nucleic acid sequence of interest sought to be identified, quantified or sequenced.

Claim 3190. (Previously Presented) The system of claim 3172, wherein said single-stranded nucleic acid is unlabeled.

Claim 3191. (Previously Presented) The system of claims 3172, 3173, 3279, 3280, 3281 or 3282, wherein said non-porous solid support is transparent or translucent.

Claim 3192. (Previously Presented) The system of claims 3173 or 3288, wherein said non-radioactive signaling moiety is quantifiable in or from a fluid or solution, said quantity being proportional to the amount or quantity of said non-radioactive signaling moiety.

Claim 3193. (Previously Presented) The system of claims 3173 or 3288, wherein said non-porous solid support is transparent or translucent, and said non-radioactive signaling moiety is quantifiable in or from a fluid or solution or from said non-porous solid support, said quantity being proportional to the amount or quantity of said non-radioactive signaling moiety.

Claim 3194. (Previously Presented) The system of claims 3173, 3281 or 3282, wherein said non-radioactive signaling moiety comprises a chromagen or a chromagenic compound.

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Claim 3195. (Previously Presented) The system of claims 3173, 3281 or 3282, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by photometric techniques.

Claim 3196. (Previously Presented) The system of claim 3172, comprising more than one single-stranded nucleic acid.

Claim 3197. (Previously Presented) The system of claims 3173, 3281 or 3282, comprising more than one double-stranded nucleic acid.

Claim 3198. (Previously Presented) An array comprising various single-stranded nucleic acids fixed or immobilized in hybridizable form to a non-porous solid support.

Claim 3199. (Previously Presented) An array comprising various double-stranded nucleic acids fixed or immobilized to a non-porous solid support, wherein at least one nucleic acid strand of said various double-stranded nucleic acids comprises at least one non-radioactive signaling moiety which is quantifiable or detectable.

Claim 3200. (Previously Presented) The array of claims 3198, 3199, 3300, 3301, 3326 or 3327, wherein said non-porous solid support comprises glass or plastic.

Claim 3201. (Previously Presented) The array of claims 3198, 3199, 3300, 3301, 3326 or 3327, wherein said non-porous solid support comprises a plate or plates, a well or wells, a microtiter well or microtiter wells, a depression or depressions, a tube or tubes, or a cuvette or cuvettes.

Claims 3202-3203. (Canceled).

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Claim 3204. (Previously Presented) The array of claims 3198, 3199, 3300, 3301, 3326 3327, comprising one or more amines.

Claim 3205. (Previously Presented) The array of claims 3198, 3199, 3300, 3301, 3326 or 3327, wherein said non-porous solid support has been treated with a surface treatment agent, a blocking agent, or both.

Claim 3206. (Previously Presented) The array of claim 3205, wherein said surface treatment agent comprises an amine providing compound, an epoxy glue or solution, an acid solution or ammonium acetate.

Claim 3207. (Previously Presented) The array of claim 3205, wherein said blocking agent comprises Denhardt's solution.

Claim 3208. (Previously Presented) The array of claims 3198, 3199, 3300, 3301, 3326 or 3327, wherein said fixation or immobilization to said non-porous solid support is covalent.

Claim 3209. (Previously Presented) The array of claims 3198, 3199, 3300, 3301, 3326 or 3327, wherein said fixation or immobilization to said non-porous solid support is non-covalent.

Claim 3210. (Canceled).

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**Claim 3211. (Previously Presented)** The array of claims 3199 or 3301, wherein the first strands of said double-stranded nucleic acids are fixed or immobilized to said non-porous solid support and the other nucleic acid strands of said double-stranded nucleic acids are hybridized to said first strands.

**Claim 3212. (Previously Presented)** The array of claims 3198 or 3300, wherein said nucleic acids is DNA.

**Claim 3213. (Previously Presented)** The array of claims 3199 or 3301, wherein said nucleic acids is DNA.

**Claim 3214. (Previously Presented)** The array of claims 3198 or 3289, wherein said nucleic acids comprise nucleic acid sequences complementary to nucleic acid sequences of interest sought to be identified, quantified or sequenced.

**Claim 3215. (Previously Presented)** The array of claims 3199 or 3290, wherein one strand of said double-stranded nucleic acids comprises a nucleic acid sequence of interest sought to be identified, quantified or sequenced.

**Claim 3216. (Previously Presented)** The array of claims 3198 or 3300, wherein said single-stranded nucleic acids are unlabeled.

**Claim 3217. (Previously Presented)** The array of claims 3198, 3199, 3300, 3301, 3326 or 3327, wherein said non-porous solid support is transparent or translucent.

**Claim 3218. (Previously Presented)** The array of claims 3199 or 3290, wherein said non-radioactive signaling moiety is quantifiable in or from a fluid or solution, said quantity being proportional to the amount or quantity of said label or labels.

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Claim 3219. (Previously Presented) The array of claims 3199 or 3290, wherein said non-porous solid support is transparent or translucent, and said non-radioactive signaling moiety is quantifiable in or from a fluid or solution or from said non-porous solid support, said quantity being proportional to the amount or quantity of said non-radioactive signaling moiety.

Claim 3220. (Previously Presented) The array of claims 3199, 3301, 3326 or 3327, wherein said non-radioactive signaling moiety comprises a chromagen or a chromagenic compound.

Claim 3221. (Previously Presented) The array of claims 3199, 3301, 3326 or 3327, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by photometric techniques.

Claim 3222. (Previously Presented) An array comprising various single-stranded nucleic acids fixed or immobilized in hybridizable form to a non-porous solid support having wells or depressions.

Claim 3223. (Previously Presented) An array comprising various double-stranded nucleic acids fixed or immobilized to a non-porous solid support having wells or depressions, wherein at least one nucleic acid strand of each of said various double-stranded nucleic acids comprises at least one non-radioactive signaling moiety which is quantifiable or detectable.

Claim 3224. (Previously Presented) The array of claims 3222 or 3223, wherein said non-porous solid support comprises glass or plastic.

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Claims 3225-3226. (Canceled).

Claim 3227. (Previously Presented) The array of claims 3222 or 3223, wherein said non-porous solid support comprises one or more amines.

Claim 3228. (Previously Presented) The array of claims 3222 or 3223, wherein said non-porous solid support has been treated with a surface treatment agent, a blocking agent, or both.

Claim 3229. (Previously Presented) The array of claim 3228, wherein said surface treatment agent comprises an amine providing compound, an epoxy glue or solution, an acid solution or ammonium acetate.

Claim 3230. (Previously Presented) The array of claim 3228, wherein said blocking agent comprises Denhardt's solution.

Claim 3231. (Previously Presented) The array of claims 3222 or 3223, wherein said fixation or immobilization to said non-porous solid support is covalent.

Claim 3232. (Previously Presented) The array of claims 3222 or 3223, wherein said fixation or immobilization to said non-porous solid support is non-covalent.

Claim 3233. (Canceled).

Claim 3234. (Previously Presented) The array of claim 3223, wherein the first strands of said double-stranded nucleic acids are fixed or immobilized to said non-porous solid support and the other nucleic acid strands of said double-stranded nucleic acids are hybridized to said first strands.

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Claim 3235. (Previously Presented) The array of claim 3222, wherein said nucleic acids are DNA.

Claim 3236. (Previously Presented) The array of claim 3223, wherein said nucleic acids are DNA.

Claim 3237. (Previously Presented) The array of claim 3222, wherein said nucleic acids comprise a gene sequence or pathogen sequence.

Claim 3238. (Previously Presented) The array of claim 3223, wherein one strand of said double-stranded nucleic acids comprises a gene sequence or pathogen sequence.

Claim 3239. (Canceled).

Claim 3240. (Previously Presented) The array of claim 3222, wherein said single-stranded nucleic acids are unlabeled.

Claim 3241. (Previously Presented) The array of claims 3222 or 3223, wherein said non-porous solid support is transparent or translucent.

Claim 3242. (Previously Presented) The array of claim 3223, wherein said non-radioactive signaling moiety is quantifiable in or from a fluid or solution, said quantity being proportional to the amount or quantity of said non-radioactive signaling moiety.

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**Claim 3243. (Previously Presented)** The array of claim 3223, wherein said non-porous solid support is transparent or translucent, and said non-radioactive signaling moiety is quantifiable in or from a fluid or solution or from said non-porous solid support, said quantity being proportional to the amount or quantity of said non-radioactive signaling moiety.

**Claim 3244. (Previously Presented)** The array of claim 3223, wherein said non-radioactive signaling moiety comprises a chromagen or a chromagenic compound.

**Claim 3245. (Previously Presented)** The array of claim 3223, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by photometric techniques.

**Claim 3246. (Previously Presented)** A non-porous glass or non-porous plastic solid support comprising one or more amine(s), hydroxyl(s) or epoxide(s) thereon, wherein at least one single-stranded nucleic acid is fixed or immobilized in hybridizable form to said non-porous solid support via said one or more amine(s), hydroxyl(s) or epoxide(s).

**Claim 3247. (Previously Presented)** A non-porous glass or non-porous plastic solid support comprising one or more amine(s), hydroxyl(s) or epoxide(s) thereon, wherein at least one double-stranded nucleic acid is fixed or immobilized to said non-porous glass or non-porous plastic solid support via said one or more amine(s), hydroxyl(s) or epoxide(s), and wherein one nucleic acid strand of said double-stranded nucleic acid has covalently attached thereto either:

- (i) a non-radioactive signaling moiety, or
- (ii) a non-radioactive bridging moiety covalently or non-covalently attached to a non-radioactive signaling moiety.

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Claim 3248. (Previously Presented) The non-porous glass or non-porous plastic solid support of claims 3246 or 3247, wherein said non-porous glass or non-porous plastic solid support comprises a plate or plates, a well or wells, a microtiter well or microtiter wells, a depression or depressions, a tube or tubes, or a cuvette or cuvettes.

Claims 3249-3251. (Canceled).

Claim 3252. (Previously Presented) The non-porous glass or non-porous plastic solid support of claims 3246 or 3247, wherein said non-porous glass or non-porous plastic solid support has been treated with a surface treatment agent, a blocking agent, or both.

Claim 3253. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3252, wherein said surface treatment agent comprises an amine providing compound, an epoxy glue or solution, an acid solution or ammonium acetate.

Claim 3254. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3252, wherein said blocking agent comprises Denhardt's solution.

Claim 3255. (Previously Presented) The non-porous glass or non-porous plastic solid support of claims 3246 or 3247, wherein said fixation or immobilization to said non-porous glass or non-porous plastic solid support is covalent.

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Claim 3256. (Previously Presented) The non-porous glass or non-porous plastic solid support of claims 3246 or 3247, wherein said fixation or immobilization to said non-porous glass or non-porous plastic solid support is non-covalent.

Claim 3257. (Canceled).

Claim 3258. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3247, wherein one strand of said double-stranded nucleic acid is fixed or immobilized to said non-porous glass or non-porous plastic solid support by sandwich hybridization or by hybridization to a complementary nucleic acid strand or sequence.

Claim 3259. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3246, wherein said nucleic acid is DNA.

Claim 3260. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3247, wherein said nucleic acid is DNA.

Claim 3261. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3246, wherein said nucleic acid comprises a nucleic acid sequence complementary to a nucleic acid sequence of interest sought to be identified, quantified or sequenced.

Claim 3262. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3247, wherein one strand of said at least one double-stranded nucleic acid comprises a nucleic acid sequence of interest sought to be identified, quantified or sequenced.

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Claim 3263. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3246, wherein said single-stranded nucleic acid is unlabeled.

Claim 3264. (Previously Presented) The non-porous glass or non-porous plastic solid support of claims 3246 or 3247, wherein said non-porous glass or non-porous plastic solid support is transparent or translucent.

Claim 3265. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3247, wherein said non-radioactive signaling moiety is quantifiable in or from a fluid or solution, said quantity being proportional to the amount or quantity of said label or labels.

Claim 3266. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3247, wherein said non-porous glass or non-porous plastic solid support is transparent or translucent, and non-radioactive signaling moiety is quantifiable in or from a fluid or solution or from said non-porous glass or non-porous plastic solid support, said quantity being proportional to the amount or quantity of said non-radioactive signaling moiety.

Claim 3267. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3246, comprising more than one single-stranded nucleic acid fixed or immobilized in hybridizable form to said non-porous glass or non-porous plastic solid support.

Claim 3268. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3247, comprising more than one double-stranded nucleic acid fixed or immobilized in hybridizable form to said non-porous glass or non-porous plastic solid support.

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Claims 3269-3270. (Canceled).

Claim 3271. (Previously Presented) A non-porous solid support comprising one or more amine(s), hydroxyl(s) or epoxide(s) thereon, wherein single-stranded nucleic acid is fixed or immobilized in hybridizable form to said non-porous solid support via said one or more amine(s), hydroxyl(s) or epoxide(s).

Claim 3272. (Previously Presented) A non-porous solid support comprising one or more amine(s), hydroxyl(s) or epoxide(s) thereon, wherein a single-stranded nucleic acid is fixed or immobilized in hybridizable form to said non-porous solid support via said one or more amine(s), hydroxyl(s) or epoxide(s).

Claim 3273. (Previously Presented) A non-porous solid support comprising one or more amine(s), hydroxyl(s) or epoxide(s) thereon, wherein nucleic acid is fixed or immobilized in hybridizable form to said non-porous solid support via said one or more amine(s), hydroxyl(s) or epoxide(s).

Claim 3274. (Previously Presented) A non-porous solid support comprising one or more amine(s), hydroxyl(s) or epoxide(s) thereon, wherein DNA or RNA is fixed or immobilized in hybridizable form to said non-porous solid support via said one or more amine(s), hydroxyl(s).

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Claim 3275. (Previously Presented) A non-porous solid support comprising double-stranded nucleic acid fixed or immobilized thereto, wherein one nucleic acid strand of said double-stranded nucleic acid has covalently attached thereto either:

- (i) a non-radioactive signaling moiety, or
- (ii) a non-radioactive bridging moiety covalently or non-covalently attached to a non-radioactive signaling moiety,

wherein said fixation or immobilization is not to a cell fixed *in situ* to said non-porous solid support.

Claim 3276. (Previously Presented) A non-porous solid support comprising a double-stranded nucleic acid fixed or immobilized thereto, wherein one nucleic acid strand of said double-stranded nucleic acid has covalently attached thereto either:

- (i) a non-radioactive signaling moiety, or
- (ii) a non-radioactive bridging moiety covalently or non-covalently attached to a non-radioactive signaling moiety,

wherein said fixation or immobilization is not to a cell fixed *in situ* to said non-porous solid support.

Claim 3277. (Previously Presented) The non-porous solid support of claims 3271, 3272, 3273, 3274, 3275, or 3276, wherein said non-porous solid support comprises glass or plastic.

Claim 3278. (Canceled).

Claim 3279. (Previously Presented) A system comprising a non-porous solid support which comprises one or more amine(s), hydroxyl(s) or epoxide(s) thereon, wherein DNA or RNA is fixed or immobilized in hybridizable form to said non-porous solid support via said one or more amine(s), hydroxyl(s) or epoxide(s).

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Claim 3280. (Previously Presented) A system comprising a non-porous solid support which comprises one or more amine(s), hydroxyl(s) or epoxide(s) thereon, wherein nucleic acid is fixed or immobilized in hybridizable form to said non-porous solid support via said one or more amine(s), hydroxyl(s) or epoxide(s).

Claim 3281. (Previously Presented) A system comprising a non-porous solid support which comprises double-stranded nucleic acid fixed or immobilized thereto, wherein one nucleic acid strand of said double-stranded nucleic acid has covalently attached thereto either:

- (i) a non-radioactive signaling moiety, or
- (ii) a non-radioactive bridging moiety covalently or non-covalently attached to a non-radioactive signaling moiety,

and wherein said fixation or immobilization is not to a cell fixed *in situ* to said non-porous solid support.

Claim 3282. (Previously Presented) A system comprising a non-porous solid support which comprises a double-stranded nucleic acid fixed or immobilized thereto, wherein one nucleic acid strand of said double-stranded nucleic acid has covalently attached thereto either:

- (i) a non-radioactive signaling moiety, or
- (ii) a non-radioactive bridging moiety covalently or non-covalently attached to a non-radioactive signaling moiety,

and wherein said fixation or immobilization is not to a cell fixed *in situ* to said non-porous solid support.

Claim 3283. (Previously Presented) The system of claims 3279, 3280, 3281 or 3282, wherein said non-porous solid support comprises glass or plastic.

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Claims 3284-3286. (Canceled).

Claim 3287. (Previously Presented) A non-porous solid support comprising at least one double-stranded nucleic acid fixed or immobilized thereto, wherein one nucleic acid strand of said at least one double-stranded nucleic acid has covalently attached thereto either:

- (i) a non-radioactive signaling moiety, or
- (ii) a non-radioactive bridging moiety covalently or non-covalently attached to a non-radioactive signaling moiety,

and wherein said fixation or immobilization is not to a cell fixed *in situ* to said non-porous solid support.

Claim 3288. (Previously Presented) The non-porous solid support of claims 3144, 3145, 3271, 3272, 3273, 3274 or 3324, wherein said fixation or immobilization is not to a cell fixed *in situ* to said non-porous solid support.

Claim 3289. (Previously Presented) The non-porous solid support of claims 3144, 3145, 3271, 3272, 3273, 3274, 3287, 3324 or 3325, wherein said non-porous solid support comprises an arrangement of wells, tubes or cuvettes.

Claim 3290. (Previously Presented) The non-porous solid support of claim 3152, wherein said amine providing compound comprises dodecadiamine (DDA), polylysine (PPL) or 6-aminohexane.

Claim 3291. (Previously Presented) The non-porous solid support of claim 3152, wherein said acid compound comprises nitric acid.

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Claim 3292. (Previously Presented) The non-porous solid support of claims 3145, 3275, 3276, 3287 or 3325, wherein said bridging moiety comprises biotin-avidin, biotin-streptavidin or sugar-lectin.

Claim 3293. (Previously Presented) The non-porous solid support of claims 3145, 3275, 3276, 3287 or 3325, wherein one strand of said at least one double-stranded nucleic acid is fixed or immobilized to said non-porous solid support by sandwich hybridization.

Claim 3294. (Previously Presented) The system of claims 3172, 3173, 3279 or 3280, wherein said fixation or immobilization is not to a cell fixed *in situ* to said non-porous solid support.

Claim 3295. (Previously Presented) The system of claims 3172, 3173, 3279, 3280, 3281 or 3282, wherein said non-porous solid support comprises an arrangement of wells, tubes or cuvettes.

Claim 3296. (Previously Presented) The system of claim 3180, wherein said amine providing compound comprises dodecadiamine (DDA), polylysine (PPL) or 6-aminoheptane.

Claim 3297. (Previously Presented) The system of claim 3180, wherein said acid compound comprises nitric acid.

Claim 3298. (Previously Presented) The system of claim 3173, wherein said bridging moiety comprises biotin-avidin, biotin-streptavidin or sugar-lectin.

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Claim 3299. (Previously Presented) The system of claims 3173, 3281 or 3282, wherein one strand of said double-stranded nucleic acid is fixed or immobilized to said non-porous solid support and the other strand of said double-stranded nucleic acid is hybridized to said one strand.

Claim 3300. (Previously Presented) An array comprising single-stranded nucleic acids fixed or immobilized in hybridizable form to a non-porous solid support.

Claim 3301. (Previously Presented) An array comprising double-stranded nucleic acids fixed or immobilized to a non-porous solid support, wherein at least one nucleic acid strand of said double-stranded nucleic acids comprises at least one non-radioactive signaling moiety which is quantifiable or detectable.

Claim 3302. (Previously Presented) The array of claims 3198, 3199, 3300, 3301, 3326 or 3327, wherein said fixation or immobilization is not to a cell fixed *in situ* to said non-porous solid support.

Claim 3303. (Previously Presented) The array of claims 3198, 3199, 3300, 3301, 3326 or 3327, wherein said non-porous solid support comprises an arrangement of wells, tubes or cuvettes.

Claim 3304. (Previously Presented) The array of claim 3206, wherein said amine providing compound comprises dodecadiamine (DDA), polylysine (PPL) or 6-aminohexane.

Claim 3305. (Previously Presented) The array of claim 3206, wherein said acid compound comprises nitric acid.

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Claim 3306. (Previously Presented) The array of claims 3199, 3301, 3326 or 3327, wherein said non-radioactive signaling moiety is attached to said at least one nucleic acid strand through a bridging moiety.

Claim 3307. (Previously Presented) The array of claim 3306, wherein said bridging moiety comprises biotin-avidin, biotin-streptavidin or sugar-lectin.

Claim 3308. (Previously Presented) The array of claims 3199 or 3301, wherein the first strands of said double-stranded nucleic acids are fixed or immobilized to said non-porous solid support and the other nucleic acid strands of said double-stranded nucleic acids are hybridized to said first strands.

Claim 3309. (Previously Presented) The array of claims 3199 or 3301, wherein one strand of said at least one double-stranded nucleic acid is fixed or immobilized to said non-porous solid support by sandwich hybridization.

Claim 3310. (Previously Presented) The array of claims 3222 or 3223, wherein said fixation or immobilization is not to a cell fixed *in situ* to said non-porous solid support.

Claim 3311. (Previously Presented) The array of claims 3222 or 3223, wherein said non-porous solid support comprises an arrangement of said wells.

Claim 3312. (Previously Presented) The array of claim 3229, wherein said amine providing compound comprises dodecadiamine (DDA), polylysine (PPL) or 6-aminohexane.

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Claim 3313. (Previously Presented) The array of claim 3229, wherein said acid compound comprises nitric acid.

Claim 3314. (Previously Presented) The array of claim 3223, wherein said at least one non-radioactive signaling moiety is attached to said at least one nucleic acid strand through a bridging moiety.

Claim 3315. (Previously Presented) The array of claim 3314, wherein said bridging moiety comprises biotin-avidin, biotin-streptavidin or sugar-lectin.

Claim 3316. (Previously Presented) The array of claim 3223, wherein one strand of various double-stranded nucleic acids is fixed or immobilized to said non-porous solid support by sandwich hybridization.

Claim 3317. (Previously Presented) The non-porous glass or non-porous plastic solid support of claims 3246 or 3247, wherein said fixation or immobilization is not to a cell fixed *in situ* to said non-porous solid support.

Claim 3318. (Previously Presented) The non-porous glass or non-porous plastic solid support of claims 3246 or 3247, wherein said non-porous solid support comprises an arrangement of wells, tubes or cuvettes.

Claim 3319. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3253, wherein said amine providing compound comprises dodecadiamine (DDA), polylysine (PPL) or 6-aminohexane.

Claim 3320. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3253, wherein said acid compound comprises nitric acid.

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Claim 3321. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3247, wherein said bridging moiety comprises biotin-avidin, biotin-streptavidin or sugar-lectin.

Claim 3322. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3247, wherein said non-radioactive signaling moiety comprises a chromagen or a chromagenic compound.

Claim 3323. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3247, wherein one strand of said at least one double-stranded nucleic acid is fixed or immobilized to said non-porous solid support by sandwich hybridization.

Claim 3324. (Previously Presented) A non-porous solid support comprising one or more amine(s), hydroxyl(s) or epoxide(s) thereon, and at least one nucleic acid strand or sequence fixed or immobilized to said non-porous solid support via said one or more amine(s), hydroxyl(s) or epoxide(s), and wherein another nucleic acid strand or sequence is hybridized to said at least one nucleic acid strand or sequence, said another nucleic acid strand or sequence having covalently attached thereto either:

- (i) a non-radioactive signaling moiety, or
- (ii) a non-radioactive bridging moiety covalently or non-covalently attached to a non-radioactive signaling moiety.

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Claim 3325. (Previously Presented) A non-porous solid support comprising at least one nucleic acid strand or sequence fixed or immobilized to said non-porous solid support, and wherein one other nucleic acid strand or sequence is hybridized to said at least one nucleic acid strand or sequence, said other nucleic acid strand or sequence having covalently attached thereto either:

- (i) a non-radioactive signaling moiety, or
- (ii) a non-radioactive bridging moiety covalently or non-covalently attached to a non-radioactive signaling moiety,

and wherein said fixation or immobilization is not to a cell fixed *in situ* to said non-porous solid support.

Claim 3326. (Previously Presented) An array comprising various nucleic acids, wherein single-stranded nucleic acids or sequences are fixed or immobilized to a non-porous solid support, and other single-stranded nucleic acids or sequences are hybridized to said fixed or immobilized single-stranded nucleic acids or sequences, said other nucleic acid strands or sequences comprising at least one non-radioactive signaling moiety which is quantifiable or detectable.

Claim 3327. (Previously Presented) An array comprising various first single-stranded nucleic acids fixed or immobilized to a non-porous solid support, and further comprising second nucleic acids hybridized to said fixed or immobilized first nucleic acids, wherein said second nucleic acids comprise at least one non-radioactive signalling moiety which is quantifiable or detectable.

Claim 3328. (Previously Presented) The non-porous solid support of claim 3287 or 3325, wherein said non-porous solid support comprises one or more hydroxyls.

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Claim 3329. (Previously Presented) The non-porous solid support of claim 3287 or 3325, wherein said non-porous solid support comprises one or more epoxides.

Claim 3330. (Previously Presented) The non-porous solid support of claims 3144, 3145, 3287, 3324 or 3325, wherein said non-porous solid support comprises a plate or plates.

Claim 3331. (Previously Presented) The non-porous solid support of claims 3144, 3145, 3287, 3324 or 3325, wherein said non-porous solid support comprises a well or wells, a microtiter well or microtiter wells, or a depression or depressions.

Claim 3332. (Previously Presented) The non-porous solid support of claims 3144 or 3324, wherein said nucleic acid is RNA.

Claim 3333. (Previously Presented) The non-porous solid support of claims 3145, 3287 or 3325, wherein said nucleic acid is RNA.

Claim 3334. (Previously Presented) The non-porous solid support of claims 3145, 3287 or 3325, wherein said nucleic acid comprises both DNA and RNA.

Claim 3335. (Previously Presented) The non-porous solid support of claims 3145, 3287 or 3325, wherein said non-radioactive signaling moiety is a colored dye compound.

Claim 3336. (Previously Presented) The non-porous solid support of claims 3145, 3287 or 3325, wherein said non-radioactive signaling moiety is a fluorogen or a fluorescent compound.

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Claim 3337. (Previously Presented) The non-porous solid support of claims 3145, 3287 or 3325, wherein said non-radioactive signaling moiety is a chemiluminescent compound.

Claim 3338. (Previously Presented) The non-porous solid support of claims 3145, 3287 or 3325, wherein said non-radioactive signaling moiety comprises a chelating compound.

Claim 3339. (Previously Presented) The non-porous solid support of claims 3145, 3287 or 3325, wherein said non-radioactive signaling moiety comprises an enzyme or an enzymatic compound.

Claim 3340. (Previously Presented) The non-porous solid support of claims 3145, 3287 or 3325, wherein said non-radioactive signaling moiety comprises a coenzyme.

Claim 3341. (Previously Presented) The non-porous solid support of claims 3145, 3287 or 3325, wherein said non-radioactive signaling moiety comprises a biotin.

Claim 3342. (Previously Presented) The non-porous solid support of claims 3145, 3287 or 3325, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by spectrophotometric techniques.

Claim 3343. (Previously Presented) The non-porous solid support of claims 3145, 3287 or 3325, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by colorimetric techniques.

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Claim 3344. (Previously Presented) The non-porous solid support of claims 3145, 3287 or 3325, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by fluorometric techniques.

Claim 3345. (Previously Presented) The non-porous solid support of claims 3145, 3287 or 3325, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by chemiluminescent techniques.

Claim 3346. (Previously Presented) The system of claims 3172, 3173, 3279, 3280, 3281 or 3282, wherein said non-porous solid support comprises a plate or plates.

Claim 3347. (Previously Presented) The system of claims 3172, 3173, 3279, 3280, 3281 or 3282, wherein said non-porous solid support comprises a well or wells, a microtiter well or microtiter wells, or a depression or depressions.

Claim 3348. (Previously Presented) The system of claims 3172 or 3280, wherein said nucleic acid is RNA.

Claim 3349. (Previously Presented) The system of claims 3173, 3281 or 3282, wherein said nucleic acid comprises RNA.

Claim 3350. (Previously Presented) The system of claims 3173, 3281 or 3282, wherein said nucleic acid comprises both DNA and RNA.

Claim 3351. (Previously Presented) The system of claims 3173, 3281 or 3282, wherein said non-radioactive signaling moiety comprises a colored dye compound.

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Claim 3352. (Previously Presented) The system of claims 3173, 3281 or 3282, wherein said non-radioactive signaling moiety comprises a fluorogen or a fluorescent compound.

Claim 3353. (Previously Presented) The system of claims 3173, 3281 or 3282, wherein said non-radioactive signaling moiety comprises a chemiluminescent compound.

Claim 3354. (Previously Presented) The system of claims 3173, 3281 or 3282, wherein said non-radioactive signaling moiety comprises a chelating compound.

Claim 3355. (Previously Presented) The system of claims 3173, 3281 or 3282, wherein said non-radioactive signaling moiety comprises an enzyme or an enzymatic compound.

Claim 3356. (Previously Presented) The system of claims 3173, 3281 or 3282, wherein said non-radioactive signaling moiety comprises a coenzyme.

Claim 3357. (Previously Presented) The system of claims 3173, 3281 or 3282, wherein said non-radioactive signaling moiety comprises a blotin.

Claim 3358. (Previously Presented) The system of claims 3173, 3281 or 3282, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by spectrophotometric techniques.

Claim 3359. (Previously Presented) The system of claims 3173, 3281 or 3282, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by colorimetric techniques.

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Claim 3360. (Previously Presented) The system of claims 3173, 3281 or 3282, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by fluorometric techniques.

Claim 3361. (Previously Presented) The system of claims 3173, 3281 or 3282, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by chemiluminescent techniques.

Claim 3362. (Previously Presented) The array of claims 3198, 3199, 3300, 3301, 3326 or 3327, wherein said non-porous solid support comprises a plate or plates.

Claim 3363. (Previously Presented) The array of claims 3198, 3199, 3300, 3301, 3326 or 3327, wherein said non-porous solid support comprises a well or wells, a microtiter well or microtiter wells, or a depression or depressions.

Claim 3364. (Previously Presented) The array of claim 3198, 3199, 3300, 3301, 3326 or 3327, wherein said non-porous solid support comprises one or more hydroxyls.

Claim 3365. (Previously Presented) The array of claim 3198, 3199, 3300, 3301, 3326 or 3327, wherein said non-porous solid support comprises one or more epoxides.

Claim 3366. (Previously Presented) The array of claims 3198 or 3300, wherein said nucleic acids is RNA.

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Claim 3367. (Previously Presented) The array of claims 3199 or 3301, wherein said nucleic acids is RNA.

Claim 3368. (Previously Presented) The array of claims 3199 or 3301, wherein said nucleic acids comprises both DNA and RNA.

Claim 3369. (Previously Presented) The array of claims 3199, 3301, 3326 or 3327, wherein said non-radioactive signaling moiety is a colored dye compound.

Claim 3370. (Previously Presented) The array of claims 3199, 3301, 3326 or 3327, wherein said non-radioactive signaling moiety is a fluorogen or a fluorescent compound.

Claim 3371. (Previously Presented) The array of claims 3199, 3301, 3326 or 3327, wherein said non-radioactive signaling moiety is a chemiluminescent compound.

Claim 3372. (Previously Presented) The array of claims 3199, 3301, 3326 or 3327, wherein said non-radioactive signaling moiety is a chelating compound.

Claim 3373. (Previously Presented) The array of claims 3199, 3301, 3326 or 3327, wherein said non-radioactive signaling moiety is an enzyme or an enzymatic compound.

Claim 3374. (Previously Presented) The array of claims 3199, 3301, 3326 or 3327, wherein said non-radioactive signaling moiety is a coenzyme.

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**Claim 3375. (Previously Presented)** The array of claims 3199, 3301, 3326 or 3327, wherein said non-radioactive signaling moiety is biotin.

**Claim 3376. (Previously Presented)** The array of claims 3199, 3301, 3326 or 3327, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by spectrophotometric techniques.

**Claim 3377. (Previously Presented)** The array of claims 3199, 3301, 3326 or 3327, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by colorimetric techniques.

**Claim 3378. (Previously Presented)** The array of claims 3199, 3301, 3326 or 3327, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by fluorometric techniques.

**Claim 3379. (Previously Presented)** The array of claims 3199, 3301, 3326 or 3327, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by chemiluminescent techniques.

**Claim 3380. (Previously Presented)** The array of claim 3222 or 3223, wherein said non-porous solid support comprises one or more hydroxyls.

**Claim 3381. (Previously Presented)** The array of claim 3222 or 3223, wherein said non-porous solid support comprises one or more epoxides.

**Claim 3382. (Previously Presented)** The array of claim 3222, wherein said nucleic acids are RNA.

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Claim 3383. (Previously Presented) The array of claim 3223, wherein said nucleic acids are RNA.

Claim 3384. (Previously Presented) The array of claim 3223, wherein said nucleic acids comprise both DNA and RNA.

Claim 3385. (Previously Presented) The array of claim 3223, wherein said non-radioactive signaling moiety comprises a colored dye compound.

Claim 3386. (Previously Presented) The array of claim 3223, wherein said non-radioactive signaling moiety comprises a fluorescent compound.

Claim 3387. (Previously Presented) The array of claim 3223, wherein said non-radioactive signaling moiety comprises a chemiluminescent compound.

Claim 3388. (Previously Presented) The array of claim 3223, wherein said non-radioactive signaling moiety comprises a chelating compound.

Claim 3389. (Previously Presented) The array of claim 3223, wherein said non-radioactive signaling moiety comprises an enzyme or an enzymatic compound.

Claim 3390. (Previously Presented) The array of claim 3223, wherein said non-radioactive signaling moiety comprises a coenzyme.

Claim 3391. (Previously Presented) The array of claim 3223, wherein said non-radioactive signaling moiety comprises a biotin.

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Claim 3392. (Previously Presented) The array of claim 3223, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by spectrophotometric techniques.

Claim 3393. (Previously Presented) The array of claim 3223, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by colorimetric techniques.

Claim 3394. (Previously Presented) The array of claim 3223, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by fluorometric techniques.

Claim 3395. (Previously Presented) The array of claim 3223, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by chemiluminescent techniques.

Claim 3396. (Previously Presented) The non-porous glass or non-porous plastic solid support of claims 3246 or 3247, wherein said non-porous glass or non-porous plastic solid support comprises a plate or plates.

Claim 3397. (Previously Presented) The non-porous glass or non-porous plastic solid support of claims 3246 or 3247, wherein said non-porous glass or non-porous plastic solid support comprises a well or wells, a microtiter well or microtiter wells, or a depression or depressions.

Claim 3398. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3246, wherein said nucleic acid is RNA.

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Claim 3399. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3247, wherein said nucleic acid is RNA.

Claim 3400. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3247, wherein said nucleic acid comprises both DNA and RNA.

Claim 3401. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3247, wherein said non-radioactive signaling moiety comprises a colored dye compound.

Claim 3402. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3247, wherein said non-radioactive signaling moiety comprises a fluorescent compound.

Claim 3403. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3247, wherein said non-radioactive signaling moiety comprises a chemiluminescent compound.

Claim 3404. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3247, wherein said non-radioactive signaling moiety comprises a chelating compound.

Claim 3405. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3247, wherein said non-radioactive signaling moiety comprises an enzyme or an enzymatic compound.

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Claim 3406. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3247, wherein said non-radioactive signaling moiety comprises a coenzyme.

Claim 3407. (Previously Presented) The non-porous glass or non-porous plastic solid support of claim 3247, wherein said non-radioactive signaling moiety comprises a biotin.

\* \* \* \* \*

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